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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/669,556	09/26/2000	David E. Simmen	ST9-99-184	4709

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EXAMINER

NGUYEN, CINDY

ART UNIT

PAPER NUMBER

2171

DATE MAILED: 08/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/669,556

Applicant(s)

SIMMEN, DAVID E.

Examiner

Cindy Nguyen

Art Unit

2171

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is in response to application filed on September 26, 2000 in which claims 1-30 are presented for examination.

1. *Information Disclosure Statement*

The information disclosure statement filed on September 26, 2000 is in compliance with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. Because it has been placed in the application file, and the information referred to therein has been considered as to the merits.

2. *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 11-15 and 21-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Schiefer et al. (U.S. 5761653) (Schiefer).

Regarding claim 1, Schiefer disclose: a method of optimizing execution of a query that accesses data stored on a data store connected to a computer (see 10, fig. 2 and corresponding text, Schiefer), comprising: using statistics on one or more automatic summary tables to determine an optimal query execution plan for the query (see col. 3, lines 37-60, Schiefer).

Regarding claims 11 and 21 in particular, all the limitations of these claims have been noted in the rejection of claim 1 above. In addition, Schiefer discloses a memory store and at least program (see 10 and 30, fig. 2 and corresponding text, Schiefer).

Regarding claims 2, 12 and 22, all the limitations of these claims have been noted in the rejection of claims 1, 11 and 21 above, respectively. In addition, Schiefer disclose: further generating cardinality estimates for one or more query execution for the query using statistics plans of one or more automatic summary tables that vertically overlap the query (see col. 7, lines 21-30, Schiefer).

Regarding claims 3, 13 and 23, all the limitations of these claims have been noted in the rejection of claims 2, 12 and 22 above, . In addition, Schiefer disclose: wherein the statistics of the one or more automatic summary tables are used to improve a combined selectivity estimate of one or more predicates of the query (see col. 6, lines 41 to col. 7, line 20, Schiefer).

Regarding claims 4, 14 and 24, all the limitations of these claims have been noted in the rejection of claims 3, 13 and 23 above. In addition, Schiefer disclose: wherein the predicates are applied by one of the automatic summary tables (see col. 10, lines 23-44, Schiefer).

Regarding claims 5, 15 and 25, all the limitations of these claims have been noted in the rejection of claims 4, 14and 24 above. In addition, Schiefer disclose: wherein the selectivity estimate comprises a ratio of a cardinality of the automatic summary table to a product of cardinalities of base tables referenced in the automatic summary table and the query (see col. 8, lines 1-28, Schiefer).

4. *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-10, 16-20 and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schiefer et al. (U.S. 5761653) (Schiefer) in view of Raitto et al. (U.S. 5991754) (Raitto).

Regarding claims 6, 16 and 26, all the limitations of these claims have been noted in the rejection of claims 3, 13 and 23 above. However, Schiefer doesn't disclose: wherein zero or more predicates of the query are applied by one of the automatic summary tables and wherein the remaining predicates are eligible to be applied on the automatic summary table. On the other hand, Raitto disclose: wherein zero or more predicates of the query are applied by one of the automatic summary tables and wherein the remaining predicates are eligible to be applied on the automatic summary table (see col. 12, lines 28-42, Raitto). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include the techniques of query as taught by Raitto, in the system of Schiefer. The motivation being to enable users to determine a most efficient execution plan for reducing the number of records data along with an estimate of the corresponding system for executing the query.

Regarding claims 7, 17 and 27, all the limitations of these claims have been noted in the rejection of claims 6, 16 and 26 above. In addition, Raitto disclose: wherein a predicate is eligible to be applied on the automatic summary table if it can be evaluated using the output columns and expressions of the automatic summary table (see col. 12, lines 9-19, Raitto).

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Regarding claims 8, 18 and 28, all the limitations of these claims have been noted in the rejection of claims 7, 17 and 27 above. In addition, Raitto disclose: further comprising determining a subpredicate combined selectivity estimate of the unapplied eligible predicates using column distribution statistics of the automatic summary table (see col. 11, lines 6-19, Raitto).

Regarding claims 9, 19 and 29, all the limitations of these claims have been noted in the rejection of claims 8, 18, and 28 above. In addition, Raitto disclose: wherein a cardinality ratio comprises a ratio of a cardinality of the automatic summary table to a product of cardinalities of base tables referenced in the automatic summary table and the query (see col. 11, line 20-30, Raitto).

Regarding claims 10, 20 and 30, all the limitations of these claims have been noted in the rejection of claims 9, 19 and 29 above. In addition, Raitto disclose: wherein the selectivity estimate comprises a product of the subpredicate combined selectivity estimate and the cardinality ratio (see col. 11, lines 31-49, Raitto).

6. *Contact Information*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cindy Nguyen whose telephone number is 703-305-4698. The examiner can normally be reached on M-F: 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone numbers for the organization where this


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application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7240 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

cn

Cindy Nguyen
August 19, 2002


SAFET METJAHIC
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100